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SOVIET ELECTRICAL EQUIPMENT MANUFACTURE

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Information on recently manufactured electrical equipment follows.

Induction Electric Motors of the Single Series A, AO, AL, AOL.

In 1949, plants of the Ministry of the Electrical Industry (MEP) began producing 3-phase induction motors of a new unified series A, AO, AL, AOL. These motors will replace the series, I, TN, AD, Ural, MA-8-9, MKM, MA-200 and AD-3,000, which are now being produced.

The nomenclature and technical data for the new motors, whose basic features include a horizontal shaft and squirrel-cage rotor, protected and enclosed ventilated, power from 0.6 to 100 kw at 1,500 rpm, are given in the catalogue of the Central Bureau of Technical Information, MEP, "Three-Phase Induction Motors of the Single Series, A, AO, AL, AOL (Preliminary Information ", 1949.

By the end of 1950 all the motors listed in this 1949 catalogue will have been put into production.

In addition to the standard model electric motors described above, flange-type modifications of these motors have been designed as well as motors with increased slip, increased moment, multi-speed, and with wound rotors.

Electric Motors for Cutting Machines

The Kemerovo Electromechanical Plant, MEP in 1949 began to produce the following electric motors for cutting machines: Type MA-191/10, hourly rating of 47 kw, 220/380 v, 1500 rpm and Type MAD/191-11, hourly rating 57 kw, 380 v, 1500 rpm.

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Rectifiers, Metallic, Mercury

The year 1949 marked the 25th year since the "Elektrosila" Plant produced the first Soviet mercury rectifier, (valve). At present, metallic mercury rectifiers of the following types are being produced by the "Uralelektroapparat" Plant:

RMNV-500 and RMNV-1000, multi-anode, without grid protection, for currents of 500 and 1000 amps; RMNV-500 x 6 and RMNV-500 x 12 single anode, with control grids for currents of 3,000 and 6,000 amp. The "Uralelektroapparat" Plant intends to design a model of the RMNV-500 and RMNV-1000 rectifiers with control grids, and also, rectifiers for 2000 amp in a multi-anode model.

Rectifiers, Glass, Mercury

The Saran Plant of the Ministry of the Electrical Industry is producing mercury rectifiers, Type VAR-51, (with a glass bulb, Type 2VN-6). The rectifier is intended for light-duty power loads from a 127/220 v line. Rectified voltage is 115 v at 3 amp. The Plant can manufacture these rectifiers for up to 300 w and for other values of rectified voltage, up to 125 v.

In addition to the Type VAR-51 rectifier, the Saran Plant produces the following types of mercury rectifiers with glass bulbs (DC data shown): VAR-3 (12 or 24 v, 12 amp); VAR-6 (12 or 24 v, 20 amp); VAR-14 (120 v, 30 amp); VAR-16 (24 and 80 v, 30 and 60 amp); VAR-24 (120 v, 60 amp); VAR-33 (275 v, 100 amp); VAR-43 (135 v, 50 amp).

Rectifiers, Selenium MAP, MPSS

Moscow Apparatus Plant (MAP) of the Ministry of the Communications Equipment Industry (MPSS), is producing selenium rectifiers for single-phase 120-220 v networks. This apparatus is intended:

a) for charging storage batteries -- Type VSA-1, rectified voltage 6.3 v, current 6 to 12 amp; Type VSA-3M, from 0.5 to 80 v, from 0.25 to 8 amp; Type VSA-4, 120 and 240 v, 2 amp; Type VSA-6M, 12 v and 12 amp, 12 v and 24 amp, 24 v and 12 amp, 24 v and 24 amp; Type VSA-10, 6 v and 7 amp, 6 v and 12 amp, 12 v and 7 amp.

b) as a source of DC -- Type VSA-5 rectified voltage 0-32 v and 32-64 v; rectified current, 0-12 amp.

c) to feed galvanizing baths -- Type VSG-3M, rectified voltage, 3.5, 4.5, 6 v, rectified current 200 amp, (voltage of supply line, 220-200 v).

d) to supply measuring instruments -- Type VSI-2, rectified voltage 4.6 ± 0.6 v, rectified current, 0.5 amp.

The plant is also producing rectifiers for various values of line voltage (from 18 to 468 v); rectified voltage, (from 12 to 170 v); rectified current, (from 0.04 to 15 amp).

Type KT-90 Water Coolers for Metallic Mercury Rectifiers

The "Uralkhimmash" Plant of the Ministry of Machine and Instrument Building has designed (in conjunction with the "Uralelektroapparat" Plant MEP, which supplies the rectifiers) and is producing water coolers, Type KT-90, intended for cooling metallic mercury rectifiers, working on a closed circulation system.

Potential Regulators

The YaEMZ Plant (Yaroslavl' Electromechanical Plant) has begun to produce the following types of three-phase induction-type regulators with hand drive, intended for prolonged operation at primary voltage of 220 v: Type TPR-22 -- 10 kva, 25-400 v, secondary voltage, efficiency 92 percent; Type TPR-221 -- 7 kva, 100-155 v secondary voltage, efficiency 91 percent.

Mining Apparatus of the KhEMZ Plant (Khabarovsk Electromechanical Plant)

The KhEMZ Plant is producing: starters, explosion-proof, drum with hand drive, Type PBG2-G, for starting squirrel-cage induction motors up to 10.5 kw at 380 v; starters, explosion-proof, magnetic type, PMV-1344-V and PMV-1355 for starting squirrel-cage induction motors up to 30 and 55 kw at 380 v; controllers, oil type, KMG-3310 for starting and reversing wound-rotor induction motors up to 100 kw at 380 v; button controls, explosion-proof, Type KUV-6012-B, two-button; junction boxes, plug, explosion-proof, Type ShV-9674/2A and ShV-9674/4 for GRShS cables for Types MA-173 and MAR-6-11/4 electric motors.

Bus Bar Plug-Conductor Assemblies

The MZEMI Plant of Glavelektromontazh has mastered the production of bus bar plug conductors type ShPSh-1 intended for intrashop distribution of electric power at a voltage up to 500 v for currents of 250 and 350 amp. One section of the bus bar conductor consists of a steel box, three meters long. Connection of feeders is provided through branch boxes with plug contacts, making it possible to rapidly disconnect and connect boxes to the operating line without switching off the voltage in it, ie., without interfering with normal operation.

In 1950, they will be able to produce bus bar plug conductors, Type ShPSh-2 for currents of 250, 400, and 600 amp.

Autotransformers Type AOS-200/5

The Moscow Transformer Plant, MEP has designed, for Type "Ayaks" induction electric furnaces, the Type AOS-200/5 single-phase autotransformer with the following technical data: voltage, 500/335-291-247-207-165-88 v; power, 200 kva at the 335 v step, and decreasing proportionally at the lower secondary voltages; the main and the five regulating ends (taps) of the coil are led out from one side by means of flat copper bus bars with holes for connectors; the clearance sizes in plan are 600 x 900 mm, height 1,200 mm, full weight, about 650 kg.

Voltage Regulators

The "Gosteasvet" Plant is producing voltage regulators for smooth regulation of voltage under load in the limits from zero to nominal value. The voltage of the supply line is 127-380 v; power of the regulators is from 20 to 260 kva; intended for industrial enterprises, scientific research institutes and laboratories.

Electropneumatic Control Instruments

An electromechanical plant of the Ministry of Machine and Instrument Building is producing electropneumatic control instruments intended for regulating the technological time processes by means of quick-acting switching of AC electric circuits up to 500 w, or pneumatic circuits at 1.5 atmospheres. Remote starting of the drive; working voltage 120 ± 10 v, AC; time of one cycle, from 47 to 118 minutes; number of operations in each circuit (switchings on and off for one cycle) - 4; number of regulated circuits - 10 (Type KEP-10) and 6 (Type KEP-6).

The plant is also producing control instruments with the following time cycles: from 4 to 16 minutes; from 12 to 48 minutes; from 3 to 12 hours; from 6 to 24 hours.

Type APV Automatic Devices, up to 25 amp, 380 v

The "Elektropul't" Plant is mastering production of these devices which are intended for control and signaling circuits.

New DC Contactors

The Cheboksarsk Electrical Apparatus Plant of the Ministry of the Electrical Industry has designed a new series of DC contactors, the KP-500, which has improved characteristics. Contactors of this series are being produced for 100, 150, and 300 amp, 650 v. Contactors of this new series for 600 amp will also be produced.

In addition, the Plant has designed and is producing universal button breakers, Type VK-10, intended to work in conjunction with the KP-500 contactors or other apparatus in the capacity of block contacts.

Control Stations of the KhEMZ Plant

The plant is producing the following control stations: for oil drilling, Type SU-4643-52 (rotor) and Type SU-4642-52 (stator); for the main drive motor of a rolling mill, Type SU-2201-4311; for a mine hoist motor, III quantities, Type SU-4101-3311 and IV quantities, Type SU-4101-4311; for a polygraphic machine, Type SU-8703-2222; for electric furnaces up to 75-600 amp, Types SU-3721-52, SU-3702-2521, SU-3703-3521, SU-3704-4521, and SU-3705-5521.

Starting Rheostats, Three-Phase Current, Type RM-1671

The "Elektrosila" Plant, MEP has designed and is producing these rheostats with oil cooling for starting induction motors with contact rings, limiting power 300 to 500 kw when starting under full load and 500 to 1000 kw when starting under half load. Limiting rotor current and voltage of the motor, 750 amp and 1200 v.

Standard Resistance Boxes

The Riga Electric Machine Building Plant (REZ), MEP has mastered production of all the models of standard boxes with high-resistance alloy elements given in the "Catalogue of Crane Equipment, Number 5, Starting and Control Resistances for Drum, Cam, and Magnetic Controllers", 1947, page 3, appendix to catalogue.

Panel for the Relay Part of Directional Protection with High-Frequency Interlocking

The Cheboksarsk Electric Apparatus Plant has designed and is producing this panel, Type PZ-161, according to the protection scheme of Teploelektroproyekt.

Current Transformers, Types TKM and TKF, 0.5 Percent Accuracy Class

The "Uralelktroapparat" Plant has begun production of the following current transformers in the 0.5 accuracy class: TKM, from 10 to 600 amp; TKF from 5 to 600 amp. The dimensions of these current transformers do not differ from the clearance dimensions of the TKM and TKF current transformers, 1 percent accuracy class, corresponding to the currents given in the catalogues for these current transformers in 1948 and 1949.

Reactors, Current Limiting, Oil

Moscow Transformer Plant is producing reactors, current limiting, oil, three-phase, Type RTMT-35-200-6, (on special order) with the following technical data: nominal voltage, 35 kv; nominal current, 200 amp; percentage reactance, 6 percent; power, 3 x 4,050 kva; reactive power, 3 x 245 kvar: inductance, 19.3 mh; reactance, 6.06 ohms; ohmic resistance, (at 75°C.) 0.118 ohms; dynamic stability 8,800 amp; thermal stability, 3,340 amp for 10 seconds. All three phases of the reactor are located in one housing. The weight of the reactor is 11,000 kg, including the 5,540 kg of oil. The height of the reactor is 4,590 mm; length and breadth, 2,860 and 2,680 mm respectively. The height from the foundation to the lifting hook on the removable part of the reactor is 7,440 mm.

Thermometric Signalizers TS

An affiliate of the Plant imeni Sergo Ordzhonikidze is producing these instruments which are manometric thermometers having electric contacts for signaling. They are intended for measuring the temperature of a medium surrounding the receiver of the apparatus, and for signaling the limiting temperatures. The scale of the instrument is unevenly graduated in degrees Centigrade, with marks at 20, 40, 60, 80 and 100. The length of the capillary tubing from the receiver to the indicator is 4.5 meters. The apparatus will be modernized at some later date.

Parts for Crane Current Feeders

Riga Electric Machine Building Plant, MEP is planning the production of parts for crane current feeders.

Solders and Fluxes for Soldering and Welding Aluminum Conductors

A plant of the Ministry of the Metallurgical Industry is producing the following solders: Mark 34A (copper 25-30 percent, silicon 4-7 percent, and aluminum; Mark Mosenergo (zinc 35 percent, and aluminum); Mark A, (tin 40-42 percent, copper 1.5-2 percent, and zinc).

The Ministry of the Chemical Industry is producing the following fluxes: Mark KM-1, (potassium chloride, 45 percent, sodium chloride 20 percent, barium chloride 20 percent, sodium fluoride 15 percent); Mark 34A, (lithium chloride 25 to 35 percent, calcium fluoride 8 to 12 percent, zinc chloride 8 to 15 percent, and potassium chloride).

Electromagnetic Sheets

Dnepropetrovsk Electro-Mechanical Plant of the Ministry of the Communications Equipment Industry is producing rectangular electro-magnetic sheets, operating on 110 v DC, intended for securing parts being machined on surface grinding machines, with and without a cooling fluid. Specific strength of attraction is 13 kg per sq cm. Three types are being produced: EP-21, (length, 540, width, 200, height 115 mm); EP-31 (length, 680, width, 300 height, 115 mm); EP-32, (length, 1000, width, 300, height, 120 mm); the power of the plates are respectively, 88-165, 99-198, and 176-308 w.

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